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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/662,859

09/15/2003

Shih-Zheng Kuo

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EXAMINER

MCCOMMAS, BRENDAN N

ART UNIT

PAPER NUMBER

2609

MAIL DATE

DELIVERY MODE

09/10/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/662,859

Applicant(s)

KUO, SHIH-ZHENG

Examiner

Brendan N. McCommas

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1, 4, and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashimizu (US Patent 6,040,923), in view of Sakaguchi (US Patent 6,490,057), further in view of Suzuki et al. (US Patent 5,856,879), hereinafter referenced as Suzuki.
2. **Regarding claim 1**, Takashimizu discloses a method for scanning, using an optical image reading apparatus, with an optical sensing device (40-1) used to scan an image line by line, and exhibited in figure 2, comprising:
3. Setting CCD reading width using, "a size sensor 44, which detects a paper size such as B5, A4, B4, and A3 from the width of the paper fed into the paper transfer path 20. Reading widths of the line CCDs 40-1 and 40-2 of the face reading unit 38-1 and back side reading unit 38-2 are set by this size detection using the paper width," and reads on claimed step of, *"setting the optical sensing device to have a front pixel region, an effective pixel region that is used for fetching an image of the document to be scanned and a post pixel region, according to a width of the document to be scanned,"*

where the 'reading width' in Takashimizu reads on the 'effective pixel region' which is set according to the document width, as disclosed in column 9, lines 20-30.

4. Charge production where, "The face reading unit 38-1 incorporates a line CCD 40-1, optically reads an image on the surface of the paper 18 passing a reading point 62 on the paper transfer path 20, converts the image into an electric signal, and finally generates image data," and reads on claimed step of, *"producing induced charges with respect to an n th scanning line,"* as disclosed in column 8, lines 48-53, where the 'reading point' in Takashimizu reads on the ' n th scanning line.'

5. Takashimizu discloses the image scanning method in columns 3-6 and the device is exhibited in figure 2. However Takashimizu fails to disclose the steps of, *"fetching out all of the induced charges belonging to the front and effective pixel regions and transferring the induced charge of the post pixel region to the front pixel region,"* and Takashimizu fails to disclose the steps of, *"processing the induced charges to form a piece of the image, which is then stored,"* and he fails to disclose, *"judging whether or not the quantity of the parameter n is equal to N , wherein if it is, then all of the pieces of the image are collected to form a full image with respect to the document to be scanned, and if it is not, then the parameter n is added by 1, and then the $(n + 1)$ th scanning line is continually scanned."*

6. However the examiner maintains that it was well known in the art for the optical reading method disclosed in Takashimizu to, *"fetch out all of the induced charges belonging to the front and effective pixel regions and transferring the induced charge of the post pixel region to the front pixel region,"* and, *"process the induced charges to*

form a piece of the image, which is then stored," and "judge whether or not the quantity of the parameter n is equal to N , wherein if it is, then all of the pieces of the image are collected to form a full image with respect to the document to be scanned, and if it is not, then the parameter n is added by 1, and then the $(n + 1)$ th scanning line is continually scanned," as taught by Sakaguchi.

7. In a similar field of endeavor, Sakaguchi discloses an image processing method. Regarding, *"fetching out all of the induced charges belonging to the front pixel region and the induced charges belonging to the effective pixel region with respect to the n th scanning line,"* Sakaguchi discloses in Figure 3 and column 8, lines 30-35, a method whereby a, "photoelectric conversion element 9 which is driven by the CCD driver supplies the image signal in every one-pixel unit to the scaling processor," and reads on claimed step of fetching all the chosen induced charges out.

8. Therefore, the examiner maintains it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Takashimizu to only fetch out 'reading width' pixel elements to the image processor, as taught by Sakaguchi, for the purpose of decreasing the scanning period.

9. Regarding, the step where the device must, *" process the induced charges to form a piece of the image, which is then stored,"* Sakaguchi discloses in column 8, lines 44-55, a detailed method for processing the chosen pixels as shown in figures 3 and 4 and storing them in line memory and reads on claimed processing step.

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10. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Sakaguchi's modification to Takashimizu for the purpose of forming the entire output image based on the stored pixel values.

11. Regarding the step of, *"judging whether or not the quantity of the parameter n is equal to N , wherein if it is, then all of the pieces of the image are collected to form a full image with respect to the document to be scanned, and if it is not, then the parameter n is added by 1, and then the $(n + 1)$ th scanning line is continually scanned,"* Sakaguchi discloses in column 6, lines 9-14, "the A/D converter 28 converts the image before reduction in every one-pixel, into the output image," implying that the image must be read line by line until the entire image is read and reads on claimed judging step.

12. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Sakaguchi's modification of reading and converting the image line by line to Takashimizu for the purpose of forming the entire output image line by line.

13. **Regarding claim 4**, Takashimizu discloses a method for scanning, using an optical image reading apparatus, with an optical sensing device (40-1), used to scan an image line by line and exhibited in figure 2, comprising:

14. Setting CCD reading width using, "a size sensor 44, which detects a paper size such as B5, A4, B4, and A3 from the width of the paper fed into the paper transfer path 20. Reading widths of the line CCDs 40-1 and 40-2 of the face reading unit 38-1 and back side reading unit 38-2 are set by this size detection using the paper width," and reads on claimed step of, *"setting the optical sensing device to have a front pixel region*

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with a C number of pixels, an effective pixel region that has (B-2C) number of pixels and is used for fetching an image of the document to be scanned, and a post pixel region with a C number of pixels, according to the width of the document to be scanned, " where the 'reading width' in Takashimizu reads on the 'effective pixel region' which is set according to the document width, as disclosed in column 9, lines 20-30.

15. Charge production where, "The face reading unit 38-1 incorporates a line CCD 40-1, optically reads an image on the surface of the paper 18 passing a reading point 62 on the paper transfer path 20, converts the image into an electric signal, and finally generates image data," and reads on claimed step of, *"producing induced charges with respect to an nth scanning line,"* as disclosed in column 8, lines 48-53, where the 'reading point' in Takashimizu reads on the 'nth scanning line.'

16. Takashimizu discloses the image scanning method in columns 3-6 and the device is exhibited in figure 2. However Takashimizu fails to disclose the steps of, *"sequentially fetching out all of the induced charges at the pixels of 1 to C belonging to the front pixel region and the induced charges at the pixels of (C+1) to (B-C) belonging to the effective pixel region with respect to the nth scanning line and transferring of the induced charges at the pixels of (B-C+1) to B belonging to the post pixel region with respect to the nth scanning line to the front pixel region at the pixels of 1 to C, so as to be added with the induced charges at the pixels of 1 to C belonging to the front pixel region with respect to the (n+1). th scanning line,"* and Takashimizu fails to disclose the step of, *"processing the induced charges to form a piece of the image, which is then stored,"* and he fails to disclose, *"judging whether or not the quantity of the parameter n*

is equal to N, wherein if it is, then all of the pieces of the image are collected to form a full image with respect to the document to be scanned, and if it is not, then the parameter n is added by 1, and then the (n +1) th scanning line is continually scanned."

17. However the examiner maintains that it was well known in the art to provide a step of, *"sequentially fetching out all of the induced charges at the pixels of 1 to C belonging to the front pixel region and the induced charges at the pixels of (C+1) to (B-C) belonging to the effective pixel region with respect to the nth scanning line and transferring of the induced charges at the pixels of (B-C+1) to B belonging to the post pixel region with respect to the nth scanning line to the front pixel region at the pixels of 1 to C, so as to be added with the induced charges at the pixels of 1 to C belonging to the front pixel region with respect to the (n+1). th scanning line," and," process the induced charges to form a piece of the image, which is then stored," and "judge whether or not the quantity of the parameter n is equal to N, wherein if it is, then all of the pieces of the image are collected to form a full image with respect to the document to be scanned, and if it is not, then the parameter n is added by 1, and then the (n +1) th scanning line is continually scanned," as taught by Sakaguchi.*

18. In a similar field of endeavor, Sakaguchi discloses an image processing method. Regarding, *"sequentially fetching out all of the induced charges at the pixels of 1 to C belonging to the front pixel region and the induced charges at the pixels of (C+1) to (B-C) belonging to the effective pixel region with respect to the nth scanning line and transferring of the induced charges at the pixels of (B-C+1) to B belonging to the post pixel region with respect to the nth scanning line to the front pixel region at the pixels of*

1 to C, so as to be added with the induced charges at the pixels of 1 to C belonging to the front pixel region with respect to the $(n+1)$.th scanning line," Sakaguchi discloses in Figure 3 and column 8, lines 30-35, a method whereby a, "photoelectric conversion element 9 which is driven by the CCD driver supplies the image signal in every one-pixel unit to the scaling processor," and reads on claimed step of fetching the chosen induced charges out.

19. Therefore, the examiner maintains it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Takashimizu to only supply 'reading width' pixel elements, which is the effective image area, to the image processor in order to decrease the scanning period. Suzuki employs such a method to only read out the center 1000 pixels for a contrast calibration, exhibited in Figure 30, step S401.

20. Regarding, the step where the device must, "*process the induced charges to form a piece of the image, which is then stored,*" Sakaguchi discloses in column 8, lines 44-55, a detailed method for processing the chosen pixels as shown in figures 3 and 4 and storing them in line memory.

21. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Sakaguchi's modification to Takashimizu for the purpose of forming the entire output image.

22. Regarding the step of, "*judging whether or not the quantity of the parameter n is equal to N , wherein if it is, then all of the pieces of the image are collected to form a full image with respect to the document to be scanned, and if it is not, then the parameter n*

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is added by 1, and then the (n +1) th scanning line is continually scanned," Sakaguchi discloses in column 6, lines 9-14, "the A/D converter 28 converts the image before reduction in every one-pixel, into the output image," implying that the image must be read line by line until the entire image is read.

23. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Sakaguchi's modification of reading and converting the image line by line to Takashimizu for the purpose of forming the entire output image.

24. **Regarding claim 7,** Takashimizu discloses a method for scanning, using an optical image reading apparatus, with an optical sensing device (40-1) used to scan an image line by line and exhibited in figure 2, comprising:

25. Setting CCD reading width using, "a size sensor 44, which detects a paper size such as B5, A4, B4, and A3 from the width of the paper fed into the paper transfer path 20. Reading widths of the line CCDs 40-1 and 40-2 of the face reading unit 38-1 and back side reading unit 38-2 are set by this size detection using the paper width," and reads on claimed step of, "*setting the optical sensing device to have a front pixel region, an effective pixel region that is used for fetching an image of the document to be scanned and a post pixel region, according to a width of the document to be scanned,*" where the 'reading width' in Takashimizu reads on the 'effective pixel region' which is set according to the document width, as disclosed in column 9, lines 20-30.

26. Takashimizu discloses the image scanning method in columns 3-6 and the device is exhibited in figure 2. However Takashimizu fails to disclose the steps of, "*sequentially fetching out all of the induced charges belonging to the front and effective*

pixel regions and transferring the induced charge of the post pixel region to the front pixel region,” and Takashimizu fails to disclose the step of,” sequentially processing the induced charges to form a piece of the image, and then collecting all of the pieces of the image to form a full image.”

27. However the examiner maintains that it was well known in the art for the optical reading method disclosed in Takashimizu to, ““*sequentially fetch out all of the induced charges belonging to the front and effective pixel regions and transferring the induced charge of the post pixel region to the front pixel region,” and,” sequentially process the induced charges to form a piece of the image, and then collect all of the pieces of the image to form a full image,”* as taught by Sakaguchi.

28. In a similar field of endeavor, Sakaguchi discloses an image processing method. Regarding, “*sequentially fetching out all of the induced charges belonging to the front pixel region and the induced charges belonging to the effective pixel region with respect to the nth scanning line,”* Sakaguchi discloses in Figure 3 and column 8, lines 30-35, a method whereby a, “photoelectric conversion element 9 which is driven by the CCD driver supplies the image signal in every one-pixel unit to the scaling processor,” and reads on claimed step of fetching all the chosen induced charges out.

29. Therefore, the examiner maintains it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Takashimizu to only fetch ‘reading width’ pixel elements to the image processor, as taught by Sakaguchi in order to decrease the scanning period.

30. Regarding, the step where the device must, "*sequentially process the induced charges to form a piece of the image, and collecting all the pieces of the image to form a whole image,*" Sakaguchi discloses in column 9, lines 43-60 and column 11, lines 5-30, a detailed method for processing the chosen pixels as shown in figures 3-7, storing them in line memory and using them to form an image.

31. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Sakaguchi's modification to Takashimizu for the purpose of forming the entire output image.

32. **Claims 2, 5, and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US Patent 5,856,879), hereinafter referenced as Suzuki.

33. **Regarding claims 2, 5, and 8** Suzuki discloses a scanning method in paragraphs 147-148 and figure 28 for scanning wherein, "The 1000-pixel data is selected such that the center pixel along the scanning line is located at the center of the image represented by the 1000-pixel data... The 1000-pixel data is processed, for example, in order to compensate for dark current, and then the maximum brightness B_{max} and the minimum brightness B_{min} are determined," which reads on the effective region described in claims 2, 5 and 8. However Suzuki never discloses a "front pixel region and post pixel region" having the same number of pixels located at the sides of this effective pixel region. However the examiner maintains that it was well known in the art for there to be two regions of pixels located outside the '1000-pixel' region, which is specified in Suzuki, and for these regions to have the same number of pixels.

34. **Claims 3, 6 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashimizu (US Patent 6,040,923).

35. **Regarding claims 3, 6 and 9** Takashimizu discloses everything as applied above (see claims 1, 4 and 7), in addition Takashimizu discloses in column 8, lines 49-50, that "the face reading unit incorporates 38-1 a line CCD 40-1" which reads on the *"optical sensing device comprising an optical charge coupled device (CCD)."*

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brendan N. McCommas whose telephone number is 571-270-3575. The examiner can normally be reached on M-F (alternate F off) 7:30 am -5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jefferey Harold can be reached on 571-272-7519. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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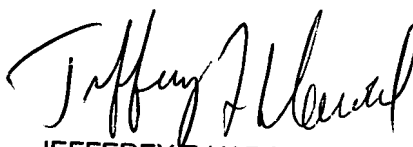
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Brendan N McCommas
Examiner
Art Unit 2609

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August 28, 2007

Brendan N. McCommas

JEFFEREY F. HAROLD
SUPERVISORY PATENT EXAMINER